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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/729,332

12/05/2003

Joseph Kwak

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7590

06/01/2005

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EXAMINER

NGUYEN, SIMON

ART UNIT

PAPER NUMBER

2685

DATE MAILED: 06/01/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/729,332

Applicant(s)

KWAK ET AL.

Examiner

SIMON D NGUYEN

Art Unit

2685

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 05 December 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-43 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-43 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 05 December 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Claim Rejections - 35 USC § 102*

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1-6, 11, 13-15, 22-24, 27-30, 34, 39, and 40-43 are rejected under 35 U.S.C. 102(e) as being anticipated by Razavilar et al. (US 2003/0097623 A1).

Regarding claim 1, Razavilar discloses a method for determining a perceived signal to noise indication for management of a wireless network (abstract, paragraph 34), comprising: basing the SNI on a parameter obtained by measuring a signal obtained at a given location (an output of the demodulator) in a receiving device (paragraphs 29, 31); and specifying a SNI indicator value with respect to a FER obtained at the receiving device (paragraph 35).

Regarding claim 22, Razavilar discloses a method for use in wireless network management (paragraph 34), comprising: determining a perceived signal to noise indication by measuring a signal at an access point (an output of demodulator 114) at a receiving location, wherein a signal to noise plus interference value is determined from a parameter of the measured signal (abstract, paragraph 65); and adjusting the

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parameter to compensate for losses downstream (downlink from a transmitter (a base station) to the receiver (wireless device)) relative to the access point (paragraph 98).

Regarding claim 30, this claim is rejected for the same reason as set forth in claim 22.

Regarding claim 2, Razavilar further discloses the signal quality of BER and FER (paragraphs 33, 35).

Regarding claims 3-5, Razavilar further discloses adjusting the parameter to compensate for losses downstream (downlink from a transmitter to the receiver) relative to the access point (paragraphs 98, 32-34), wherein in the parameter is obtained from a demodulator (abstract, paragraph 31).

Regarding claim 6, Razavilar discloses the parameter is invariant with respect to data rate (paragraph 24).

Regarding claims 11, 23-24, Razavilar further discloses the signal to noise values with respect to the obtained FER at one particular data rate/ demodulator/ FEC point (figs.1-2, paragraphs 23-26).

Regarding claims 13-14, and 27-28, Razavilar further discloses the AP is at an output of the demodulator (the output of the demodulator considered as a front end of the receiver) (abstract).

Regarding claims 15, 29, Razavilar further discloses the signal to noise plus interference (paragraph 65).

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Regarding claim 34, Razavilar further discloses means for adjusting the parameter at the transceiver (base station) for FER decoder which occur downstream relative to the demodulator in a receiver (mobile device) (paragraph 98).

Regarding claim 39, Razavilar further discloses the signal quality of BER and FER (paragraphs 33, 35).

Regarding claim 40-43, these claims are rejected for the same reason as set forth in claims 25-28, respectively.

### ***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 12, 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Razavilar et al. (US 2003/0097623 A1).

Regarding claim 12, 25, Razavilar fails to teach measuring the signal quality indicator at an internal point of a demodulator. It should be noted that Razavilar has disclosed that the quality of received signal is measured at the output of the demodulator (abstract). Therefore, it would have been obvious to one skilled in the art to pick any point in the receiver to measure the quality of signal, for example, at an internal

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point of the demodulator to determine any problem it may caused by the demodulator in order to replace only the demodulator than whole receiver.

5. Claims 16-21, 31-33, and 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Razavilar et al. (US 2003/0097623 A1) in view of McCune (6,850,736).

Regarding claim 16, Razavilar discloses a method for use in wireless network management (paragraph 34), comprising: determining a perceived signal to noise indication by measuring a signal at an access point (an output of demodulator 114) at a receiving location, wherein a signal to noise plus interference value is determined from a parameter of the measured signal (abstract, paragraph 65); and adjusting the parameter to compensate for losses downstream (downlink from a transmitter to the receiver) relative to the access point (paragraph 98). It should be noted that Razavilar disclosing measuring a channel condition metric corresponding to a signal received in a receiver which is obviously at a receiving location. However, Razavilar does not specifically disclose so.

McCure, in the same field of invention, discloses a mobile device measuring a BER signal transmitted by a base station at a receiving location (column 5 lines 50 to column 6 line 67). Therefore, it would have been obvious to one skilled in the art at the time the invention was made to have Razavilar, modified by McCure to measure bit error rates of received signals as the mobile device moves from different locations in order to optimize the received signal.

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Regarding claims 17-18, Razavilar further discloses wherein the signal is measured at an AP of a demodulator at said receiving location (paragraph 65).

Regarding claims 19, 31, McCune further discloses providing AGC to the received signal (column 9 lines 10-13). It should be noted that the AGC controlling a baseband signal is known to those skilled in the art.

Regarding claims 20-21, 32-33, Razavilar discloses demodulating of the signal physical layer relates to the FER from a FEC decoder (paragraphs 10, 33). It should be noted that a A/D converter coupled in front of a demodulator is known to those skilled in the art.

Regarding claim 35, Razavilar discloses a FEC decoder; means for creating a replica of correct input bits inputted to the decoder; means for determining a BER and means for determining a FER (paragraphs 25-26, 31-36). It should be noted that Razavilar does not specifically disclose the step of comparing.

McCune discloses the step of comparing the SNR (BER) with a predetermined value (considered as created bits). Therefore, it would have been obvious to one skilled in the art at the time the invention was made to have Razavilar, modified by McCune to detect precisely an error rate in a received frame in order to improve the system performance.

6. Claims 7-8, 10, 36-38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Razavilar et al. (US 2003/0097623 A1) in view of Olzewski (US 2003/0223354 A1).

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Regarding claims 7-8, 10, 36-38, Razavilar discloses the receiver is an OFDM which is a CDMA system, wherein the CDMA system having a spreading code correlating quality, baseband vector magnitude, which is known to those skilled in the art. However, Razavilar does not specifically disclose these features.

Olszewski, discloses a SINR measurement in an OFDM receiver (figs.1, 7), comprising; baseband vector magnitude, spreading code (orthogonal) correction quality (figs.1, 7, paragraph 91, 95), and a signal tracking (paragraph 98). However, both do not specifically disclose phase jitter and error vector. It should be noted that for measuring the SINR in the system, a phase jitter and error vector magnitude are the features need to be considered for controlling the quality of received signal which is known to those skilled in the art in order to improve the system performance.

7. Claims 9, 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Razavilar et al. (US 2003/0097623 A1) in view of Haim (US 2002/0102944 A1).

Regarding claims 9, 26, Razavilar fails to discloses measuring at an output of antenna in a receiver.

Haim, in the same field of invention, discloses a SIR measuring means (32 or 72) for measuring SIR at an output of the antenna (figs. 7-8). Therefore, it would have been obvious to one skilled in the art at the time the invention was made to have Razavilar, modified by Haim to detect any problem may be caused by the antenna in order to replace or adjust the antenna.



### ***Conclusion***

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. McCune (6,850,736) discloses a method for determining a perceived signal to noise indication for management of a wireless network (abstract), comprising: basing the SNI on a parameter (a signal quality) obtained by measuring a signal obtained at a given location (e.g. a feedback signal from an AGC or an output from an amplifier) in a receiving device (column 7 line 63 to column 8 line 17, column 4 lines 10-41); and specifying a SNI indicator value with respect to a bit error rate (BER) obtained at the receiving device (fig.7, column 8 lines 46-64). It should be noted that McCune disclosing the SNI with respect to the BER wherein a plurality of BERs is a frame error rate (FER); Olszewski (2003/0223354) discloses a method for measuring SINR in a wireless communication system as claimed in independent claims (abstract, figs.1-10, 14).

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Simon Nguyen whose telephone number is (571) 272-7894. The examiner can normally be reached on Monday-Friday from 7:00 AM to 4:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward F. Urban, can be reached on (571) 272-7899.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 306-0377.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

600 Dulany, Alexandria, VA 22314

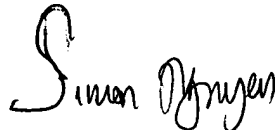
Or faxed to:

(703) 872-9314, (for formal communications intended for entry)

Hand-delivered response should be brought to Knox building,  
501 Dulany, Alexandria, VA.

Simon Nguyen

May 24, 2005

A handwritten signature in black ink that reads "Simon Nguyen". The signature is written in a cursive, flowing style.

**SIMON NGUYEN  
PRIMARY EXAMINER**